MIDMARK®

Installation Instructions

419 Base Actuator Replacement Kit
002-0627-00 (115 VAC)
002-0627-01 (230 VAC)

Kit Components

The 419 Base Actuator Replacement Kit contains the following components. Check to ensure the kit has all of the components and hardware before beginning the repair.

Description	Part Number	Qty
Base actuator	016-0801-00 (115 VAC) 016-0802-00 (230 VAC)	1
Cable tie	015-0013-00	2
Dbl. sided tape	042-0123-00	2
Limit switch stop	050-4323-00	1
Installation instructions	003-1042-00	1

A. Removal of Base Actuator

(1) Depress BASE UP button on hand control until table reaches its maximum height.

(2) Run TILT, FOOT, and BACK functions to level table top.

WARNING

Always disconnect the power cord from the outlet receptacle before removing any of the table's covers/shrouds or making any repairs to prevent the possibility of electrical shock. Failure to comply with these instructions could result in severe personal injury or death.

(3) Unplug table power cord from outlet receptacle.

(4) Remove four screws (1, Figure 1) and R.H. and L.H. outer shrouds (2) from column adapter weldment (3).

(5) Remove four screws (4) and R.H. and L.H. middle shrouds (5).

(6) Disconnect two modular cords (6) from two inlet PC boards (7).

(7) Remove four screws (8), and four screws (9); then partially remove R.H. and L.H. inner shrouds (10) from base casting (11).

(8) Place supports (A) under back section (B) and foot section (C).

(9) Remove two screws (1, Figure 2) and PC board cover (2) from base casting (3).

(10) Remove screw (4) and cable strap (A) from base casting (3). Cut cable strap.

(11) Cut all cable ties (B) securing base actuator wires to other wires.

(12) Remove plastic wrapping (5) from wires.

(13) Disconnect base wire harness (6) and brake wire harness (7) from PC control board (8).

(14) Loosen screw (9).

(15) Push base capacitor (10) out of capacitor strap (11).

DANGER

A capacitor contains stored electricity. Never touch terminals of a capacitor, even if power has been shut off or disconnected. Always discharge capacitor before touching capacitor terminals or wires. Failure to comply with these instruction could result in serious personal injury or death.

(16) Discharge base capacitor (10).

(17) Tag and disconnect two actuator wires (12) from terminals of base capacitor (10).

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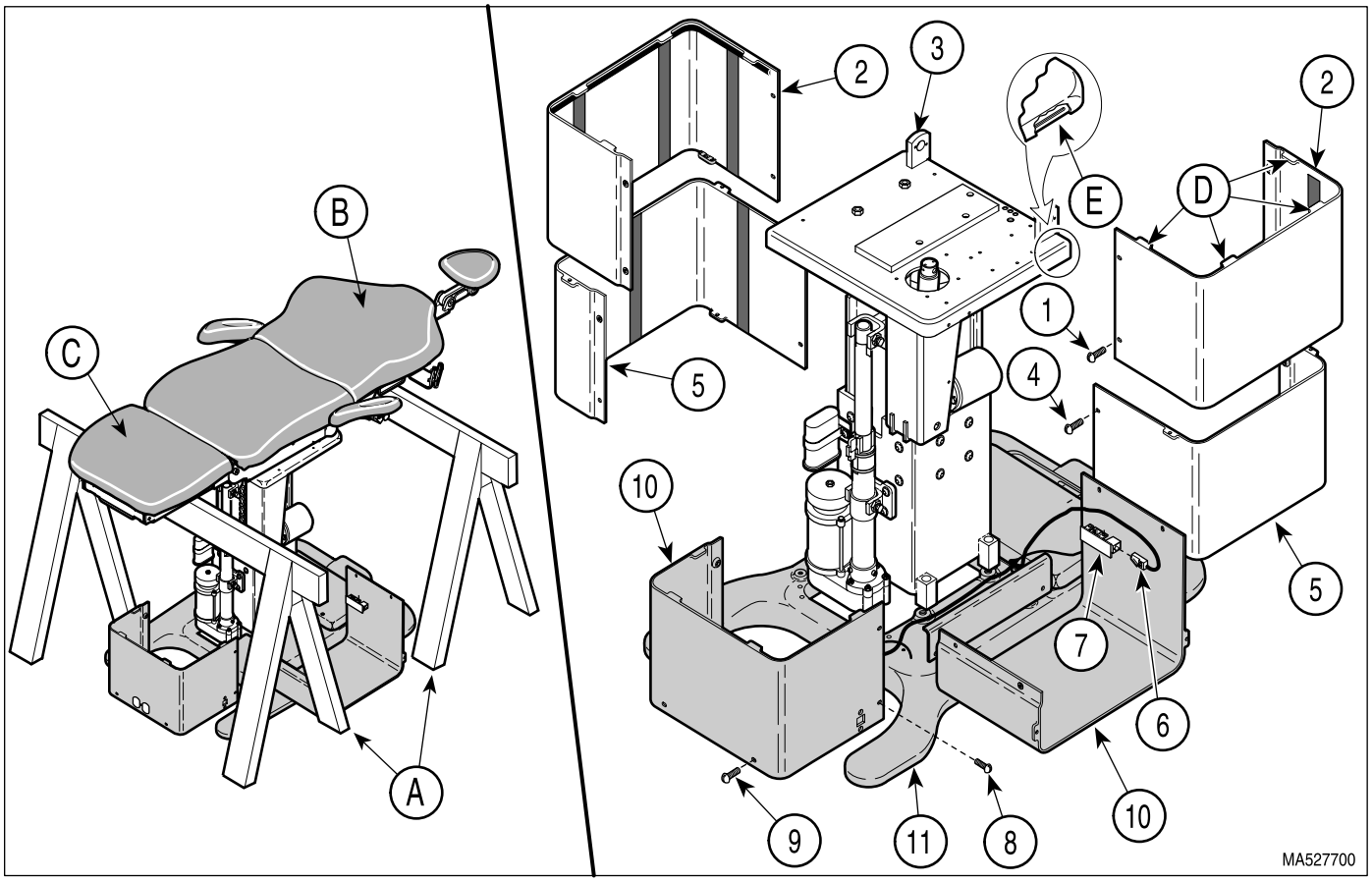

Figure 1. Base Shrouds Removal / Installation

(18) Cut two wire ties (13); then remove limit switch bracket (14) from base actuator (15).

(19) On programmable tables only, remove screw (16) and cable bracket (17) from pivot screw (18).

(20) Loosen two jam nuts (19).

DANGER

Make sure table top is securely held by supports to prevent it from falling once pivot screws are removed. Failure to do so could result in serious personal injury or death.

(21) Remove two pivot screws (20) securing base actuator (15) to column assembly (21).

(22) Loosen two jam nuts (22).

(23) Remove two pivot screws (18) and base actuator (15) from column assembly (21).

(24) Loosen three screws (23).

B. Installation of Base Actuator

(1) Remove jam nuts (19 and 22, Figure 2) from pivot screws (18 and 20).

(2) Clean adhesive residue from threads of four pivot screws (18 and 20).

(3) Screw jam nuts (19 and 22) on pivot screws (18 and 20) fully.

(4) Coat the threads of two pivot screws (20), which are located directly in front of jam nuts (19), with permanent threadlocking adhesive (Loctite 262).

NOTE

When installing pivot screws, adjust pivot screws until shaft (C) of base actuator (15) is centered in bracket.

(5) Install base actuator (15) on column assembly (21) and secure with two pivot screws (20). Tighten pivot screws to 50 to 60 in-lbs. (5.6 to 6.8 N•m).

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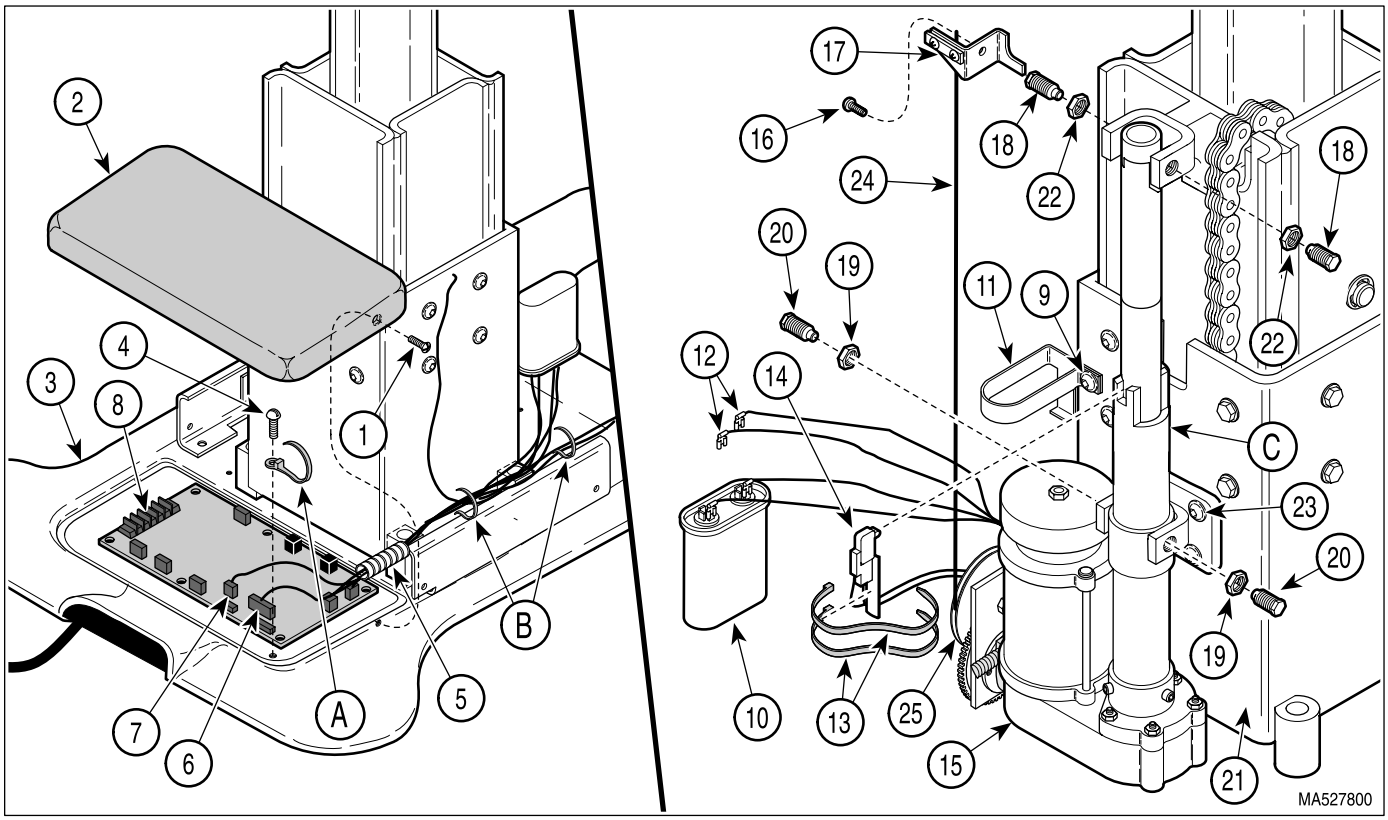

Figure 2. Base Actuator Removal / Installation

(6) Tighten two jam nuts (19) to 45 - 55 ft-lbs. (61 to 74.6 N•m).

(7) Install plastic wrapping (5) around base actuator wires.

(8) Connect brake wire harness (7) and base wire harness (6) to PC control board (8).

(9) Connect two actuator wires (12) to terminals of base capacitor (10).

(10) Slide base capacitor (10) into capacitor strap (11) and secure by tightening screw (9).

(11) Secure wires together with cable strap (A). Secure cable strap to base casting (3) with screw (4).

(12) Secure wires together as a bundle with two or more cable ties (B).

(13) Install PC board cover (2) on base casting (3) and secure with two screws (1).

(14) Plug one modular cord (6, Figure 1) into each inlet PC board (7).

(15) Plug table power cord into outlet receptacle.

EQUIPMENT ALERT

On programmable tables, make sure cable bracket (17, Figure 2) is clear of the column assembly. Failure to do so could result in the cable bracket being damaged.

(16) Run BASE UP and / or BASE DOWN function until shaft (C, Figure 2) of base actuator (15) is aligned with bracket of column assembly (21).

(17) Coat threads of two pivot screws (18), which are directly in front of jam nuts (22), with permanent threadlocking adhesive (Loctite 262).

NOTE

When installing pivot screws, adjust pivot screws (18) until shaft (C) of base actuator (15) is centered in bracket.

(18) Secure shaft (C) of base actuator (15) on column assembly (21) and secure with two pivot screws (18). Tighten pivot screws to 50 to 60 in-lbs. (5.6 to 6.8 N•m).

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(19) Tighten two jam nuts (22) to 45 - 55 ft-lbs. (61 to 74.6 N•m).

(20) Tighten three screws (23) to 23 - 27 ft-lbs (31- 36 N•m).

(21) On programmable tables, install cable bracket (17) on R.H. pivot screw (18) and secure with screw (16). Do not wrap cable (24) around pulley (25) at this time.

(22) Run BASE UP function until table top is off of supports (A, Figure 1); then remove supports from under table top.

(23) Lower BASE DOWN function all the way down.

NOTE
If necessary, the pulley (25, Figure 2) can be rotated back and forth up to 1/2 turn to assist in getting the cable (24) on the pulley.

(24) On programmable tables, wrap cable (24, Figure 2) around pulley (25) in direction shown in illustration until all cable slack is removed. Cable should be able to be wrapped around pulley 2-1/2 to 3 times.

(25) Raise BASE UP function to its maximum height.

(26) Clean shaft (A, Figure 3) of base actuator (1) and inside of limit switch stop (2) with degreaser.

EQUIPMENT ALERT
Once applied, double sided tape is very difficult to remove. Be sure to position double sided tape at the top of limit switch stop as shown in Figure 3. Failure to do so could result in damage to base actuator limit switch.

(27) Peel off one side of backing, and apply double sided tape (3) to the inside of limit switch stop (2); then peel backing from other side of tape.

EQUIPMENT ALERT
Be sure to install limit switch stop in the position shown in Figure 3. Improper positioning could allow foot rest extension to collide with floor.

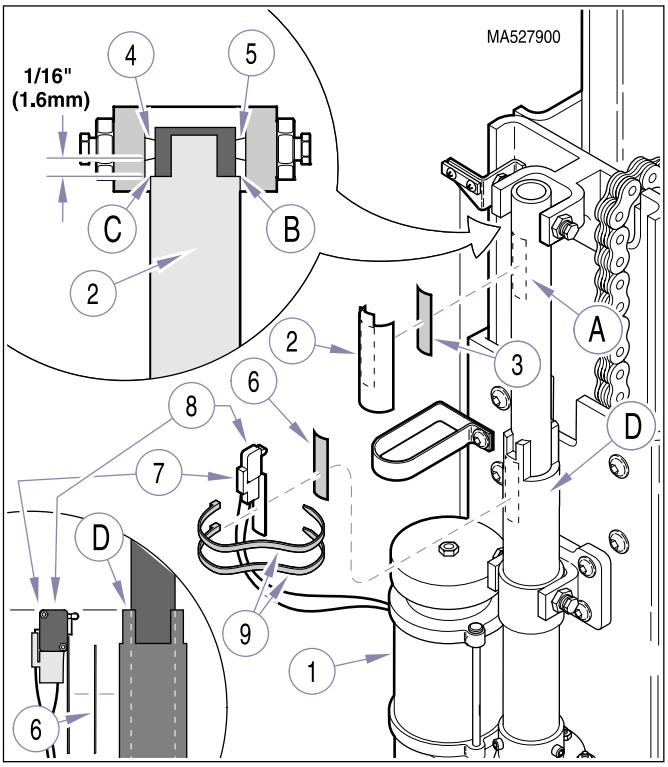

Figure 3. Base Limit Switch / Limit Switch Stop Removal / Installation

(28) Install limit switch stop (2) on shaft (A) of base actuator (1) so that edges (B and C) are no more than 1/16 in. (1.6 mm) from pivot screws (4 and 5).

(29) Clean tube (D) of base actuator (1) with degreaser.

NOTE
Once applied, double sided tape is very difficult to remove. Be sure to apply double sided tape in the position shown in Figure 3.

(30) Peel off one side of backing, and apply double sided tape (6) to tube (D) of base actuator (1); then peel backing from other side of tape.

EQUIPMENT ALERT
Be sure to install limit switch bracket in the position shown in Figure 3. Improper positioning could allow foot rest extension to collide with floor.

(31) Position limit switch bracket (7) on double sided tape (6) so that top edge of limit switch (8) is even with the highest edge of tube (D).

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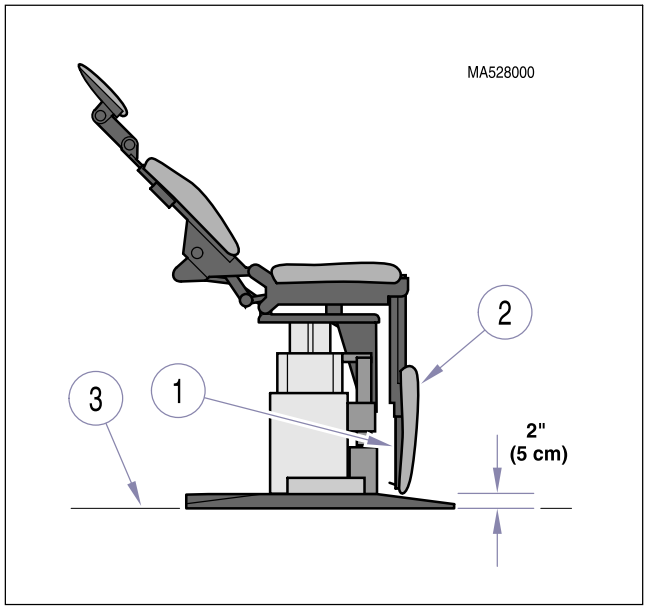

Figure 4. Minimum Clearance Requirement

(32) Plug table power cord into wall outlet.

(33) Depress BASE UP button on hand control until table reaches its maximum height; then pull foot rest extension (1, Figure 4) out as far as it will go.

(34) Depress FOOT DOWN, and TILT DOWN buttons on hand control until functions reach their lowest positions.

(35) Depress BASE DOWN button on hand control.

Observe. Table should go approximately 1/2 way down then stop; Foot Rest Extension lamp on the hand control should flash. There should be a ***minimum*** of 2.0 in. (5.0 cm) clearance between the foot section upholstery (2) and the floor (3). If minimum clearance is met, go to step 37. If clearance is ***less*** than 2.0 in. (5.0 cm) go to step 36.

(36) If there is ***less*** than 2.0 in. (5.0 cm) of clearance between foot section upholstery (2) and floor (3), repeat steps 31 thru 35.

(37) Secure limit switch bracket (7) to base actuator (1) with two wire ties (8).

EQUIPMENT ALERT

When installing shrouds, make sure all bumpers and snap-on glides are in place. Failure to do so could result in damage to shrouds and grinding sounds when table is raised and lowered.

(38) Install R.H. and L.H. inner shrouds (12, Figure 1) on base casting (13) and secure with four screws (9), and four screws (8).

(39) Assemble R.H. and L.H. middle shrouds (5) around inner shrouds (12) with four screws (4).

(40) Install tabs (D) of R.H. and L.H. outer shrouds (2) in slots (E) of column adapter weldment (3) and secure with four screws (1), making sure middle outer shroud assembly (5) is captured by R.H. and L.H. outer shrouds (2).

(41) On programmable tables, calibrate the PC control board (Refer to C. PC Control Board Calibration).

C. PC Control Board Calibration (Programmable Tables Only)

. *Clearing PC Control Board Error Code Memory.*

(1) Unplug table power cord from outlet receptacle for at least ten seconds.

(2) Depress and hold the PROGRAM button (1, Figure 5) while simultaneously plugging the table power cord into the outlet receptacle.

Observe. The PROGRAM MODE lamp (2) and the FOOT REST EXTENSION lamp (3) will simultaneously illuminate for approximately 5 seconds and then go out.

(3) After the PROGRAM MODE lamp (2) and the FOOT REST EXTENSION lamp (3) go out, release the PROGRAM button (1).

Observe. After approximately 10 to 20 seconds, the PC control board will sound two beeps, indicating the error codes were successfully cleared from memory. If the two beeps do not sound, repeat the entire procedure

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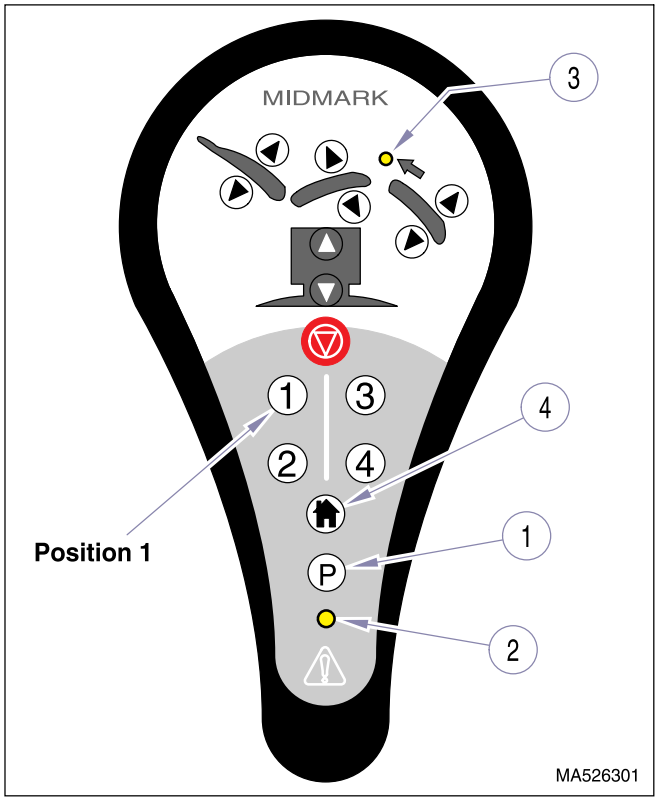

Figure 5. Clearing PC Control Board Memory

. *Calibrating PC Control Board.*

(1) Unplug table power cord from outlet receptacle for at least ten seconds.

(2) Depress and hold the Position “1” button on hand control (see Figure 5) while simultaneously plugging the table power cord into the outlet receptacle.

Observe. The PROGRAM MODE lamp (2) and the FOOT REST EXTENSION lamp (3) will illuminate for approximately three seconds and will then go out.

NOTE
When performing the following step, release the Position “1” button within three seconds after the PROGRAM MODE and FOOT REST EXTENSION lamps go out. Failure to do so will cause the calibration to fail.

(3) After the PROGRAM MODE lamp (2) and the FOOT REST EXTENSION lamp (3) go out, release Position “1” button.

NOTE
If performing calibration procedure using foot control, press the HOME button momentarily, then immediately press and hold the DOWN button.

(4) Within 5 seconds, press and hold the HOME position button (4).

Observe. The PROGRAM MODE lamp (2) and FOOT REST EXTENSION lamp (3) will illuminate for three seconds and then go out.

NOTE
If performing calibration procedure using foot control, release DOWN button After the PROGRAM MODE lamp and the FOOT REST EXTENSION lamp go out

(5) After the PROGRAM MODE lamp (2) and the FOOT REST EXTENSION lamp (3) go out, release the HOME position button (4).

Observe. The table top will automatically begin to move; all functions will be run to their limits in the following order: Table Up, Foot Down, Foot Up, Tilt Up, Tilt Down, Back Down, Back Up, and Table Down. When the TABLE DOWN function is completely lowered, the calibration routine is complete. Also, the PC control board will sound a beep every two seconds, indicating a calibration routine is in progress.

(6) Check the hand control; if the PROGRAM MODE lamp (2) and FOOT REST EXTENSION lamp (3) begin to flash, an error condition occurred which resulted in an unsuccessful calibration; repeat the entire procedure. If the PROGRAM MODE lamp and FOOT REST EXTENSION lamp do not begin to flash, the calibration was successful.

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